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09/987,426	11/14/2001	Tae-kyung Kim *	1293.1165	6668

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EXAMINER

CHOI, WILLIAM C

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,426

Applicant(s)

KIM ET AL.

Examiner

William C. Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 17-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8 and 17-42 is/are rejected.
- 7) ☒ Claim(s) 3 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Loha Ben
Primary Examiner

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 17-34 is withdrawn in view of the newly discovered reference(s) to Iwaki et al (U.S. 5,491,587). Rejections based on the newly cited reference(s) follow.

Claim Objections

Applicant is advised that should claim 39 be found allowable, claim 40 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19 (and dependent claims 23, 27 and 31), 33, 39, 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Specifically, in regards to claims 33, 39 and 40, applicant sets forth the limitation wherein the Abbe number of the material of the first lens being in a range "**including** 27.5 and 31.2." Applicant has not specified any upper or lower limit to the claimed range, thereby rendering the claims vague and indefinite. *Therefore, since no specific range was indicated, for purposes of examination, it was assumed that these claims would inherently be met by any reference.*

Specifically, in regards to claims 19 and 41, applicant sets forth the limitation wherein the light source emits light having a wavelength in a range "**including** 400 and 420 nm". Applicant has not specified any upper or lower limit to the claimed range, thereby rendering the claims vague and indefinite. Therefore, since no specific range was indicated, for purposes of examination, it was assumed that the limitation regarding the range disclosed in these claims would inherently be met by any reference. Claims 23, 27 and 31 inherit the indefiniteness of parent claim 19.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwaki et al.

In regards to claim 1, Iwaki et al discloses an objective lens device (column 8, line 37, Figure 5) comprising three lenses (Figure 5) wherein: a first of the three lenses has a negative power (Figure 5, re right lens of "1") and is formed of a material having an Abbe number which is 45 or less in line d (column 9, Table 3, NO. 2); at least one surface of the surfaces of the three lenses is aspherical (column 8, lines 53-54 and column 9, Table 4) and satisfies the claimed equation regarding focal lengths (column 9, Table 3).

Regarding claim 2, Iwaki et al discloses wherein a second of the three lenses has a positive power (Figure 5, re left lens of "1") and the first lens is combined with the second lens to be a doublet (Figure 5, "1") so that a structure of the objective lens device is formed in two groups of lenses (Figure 5, "1" and "2").

Regarding claim 4, Iwaki et al discloses wherein the first lens is formed of glass or plastic (column 9, Table 3).

Regarding claims 5 and 8, Iwaki et al discloses wherein second and third lenses of the three lenses have a positive power (Figure 5, re left lens of "1"), and the first lens is disposed between the second and third lenses (Figure 5, "2").

Regarding claim 6, Iwaki et al discloses wherein a third of the three lenses has a positive power (Figure 5, "2") and the first lens (Figure 5, re right lens of "1") is disposed between the second (Figure 5, re left lens of "1") and third lenses (Figure 5, "2").

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 18, 20-22, 24-26, 28-30 and 32-42 are rejected under 35

U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. 4,927,247) in view of Iwaki et al.

In regards to claim 17, Tanaka et al discloses an optical pickup (column 1, lines 58-64, Figure 1) comprising: a light source which emits light (column 3, lines 6-8, Figure 1, "1"); an objective lens device which focuses the light emitted from the light source into a light spot formed on a recording medium (column 3, lines 13-14, Figure 1, "5"); an optical path changer which changes a proceeding path of incident light (column 3, lines 10-12, Figure 1, "3" and "4"), the optical path changer arranged on an optical path between the light source and the objective lens device (Figure 1, "3" and "4"); and a photodetector which receives light reflected by the recording medium and via the objective lens device and the optical path changer (column 3, lines 18-19, Figure 1, "9") but does not specifically disclose the claimed limitations regarding the objective lens. Within the same field of endeavor (column 1, lines 20-27), Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed (i.e. comprising three lenses (Figure 5) wherein a first of the three lenses has a negative power (Figure 5, right lens of "1") and is formed of a material having an Abbe number which is 45 or less

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in line d (column 9, Table 3, NO. 2), and at least one surface of the surfaces is aspherical (column 8, lines 53-54 and column 9, Table 4)) for the purpose of providing an improved means of correcting chromatic aberration (i.e. less expensive and lighter) (column 1, lines 49-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the optical pickup of Tanaka et al to comprise an objective lens as claimed, since Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed for the purpose of providing an improved means of correcting chromatic aberration (i.e. less expensive and lighter).

Regarding claim 18, Iwaki et al teaches wherein a second of the three lenses has a positive power (Figure 5, re left lens of "1") and the first lens is combined with the second lens to be a doublet (Figure 5, "1").

Regarding claim 20, Iwaki et al teaches wherein the first lens is formed of glass or plastic (column 9, Table 3).

Regarding claims 21 and 24, Iwaki et al teaches wherein second and third lenses of the three lenses have a positive power (Figure 5, re left lens of "1"), and the first lens is disposed between the second and third lenses (Figure 5, "2").

Regarding claim 22, Iwaki et al teaches wherein a third of the three lenses has a positive power (Figure 5, "2") and the first lens (Figure 5, re right lens of "1") is disposed between the second (Figure 5, re left lens of "1") and third lenses (Figure 5, "2").

Regarding claim 25, 26, 28-30 and 32, Iwaki et al teaches wherein the objective lens satisfies the claimed equation regarding focal lengths (column 9, Table 3).

Regarding claim 33, the Abbe number of the material of the first lens of Iwaki et al would inherently be in a range including 27.5 and 31.2 since no specific range is specified.

Regarding claim 34, Iwaki et al teaches wherein the Abbe number of the material of the first lens is 35 or less (column 9, Table 3, NI. "2").

Regarding claim 35, Iwaki et al teaches wherein the aspherical surface is formed on one of the second and third lenses (column 8, lines 53-54 and column 9, Table 4).

In regards to claim 36, Tanaka et al discloses an optical pickup (column 1, lines 58-64, Figure 1) for recording information to and/or reproducing information from a recording medium, the optical pickup comprising: a light source which emits light (column 3, lines 6-8, Figure 1, "1"); a photodetector (column 3, lines 18-19, Figure 1, "9"); and an optical system which communicates the emitted light to the recording medium and communicates light reflected by the recording medium to the photodetector (column 3, lines 10-12, Figure 1, "3-5"), the optical system comprising: an objective lens device which forms the emitted light into a light spot on the recording medium (column 3, lines 13-14, Figure 1, "5"), but does not specifically disclose the claimed limitations regarding the objective lens. Within the same field of endeavor (column 1, lines 20-27), Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed (i.e. comprising first, second and third lenses (Figure 5), wherein: the first lens has a negative power (Figure 5, re right lens of "1") and is formed of a material having an Abbe number which is 45 or less in line d (column 9, Table 3, NO. 2), the second and third lenses have a positive power (Figure 5, re left lens of "1" and "2"), one of the

second and third lenses is aspherical (column 8, lines 53-54 and column 9, Table 4), and the first lens (Figure 5, re right lens of "1") is disposed between the second (Figure 5, re left lens of "1") and third lenses (Figure 5, "2") on an optical path between the light source (Figure 5, "1") and the recording medium (Figure 5, "10")) for the purpose of providing an improved means of correcting chromatic aberration (i.e. less expensive and lighter) (column 1, lines 49-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the optical pickup of Tanaka et al to comprise an objective lens as claimed, since Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed for the purpose of providing an improved means of correcting chromatic aberration (i.e. less expensive and lighter).

Regarding claim 37, Iwaki et al teaches wherein the first lens and second lenses are arranged to form a doublet (Figure 5, "1").

Regarding claim 38, Iwaki et al teaches wherein the Abbe number is in a range of 35 or less (column 9, Table 3, NO. "2").

Regarding claims 39 and 40, the Abbe number of the optical pickup of Iwaki et al would inherently be in a range including 27.5 and 31.2, this being reasonably assumed from there being no specific range specified.

Regarding claim 41, the light source of Iwaki et al would inherently emit light having a wavelength in a range including 400 and 420 nm, this being reasonably assumed from there being no specific range specified.

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In regards to claim 42, Tanaka et al discloses an optical pickup (column 1, lines 58-64, Figure 1) for recording information to and/or reproducing information from a recording medium, the optical pickup comprising: a light source which emits light (column 3, lines 6-8, Figure 1, "1"); a photodetector (column 3, lines 18-19, Figure 1, "9"); an objective lens device which forms the emitted light into a light spot on the recording medium (column 3, lines 13-14, Figure 1, "5") and communicates light reflected by the recording medium toward the photodetector (column 3, lines 16-19), but does not specifically disclose the claimed limitations regarding the objective lens. Within the same field of endeavor (column 1, lines 20-27), Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed (i.e. comprising a first lens having a negative power (Figure 5, re right lens of "1") and formed of a material having an Abbe number which is 45 or less in line d (column 9, Table 3, NO. 2), a second lens having a positive power and forming a doublet with the first lens (Figure 5, re left lens of "1"), and a third lens having a positive power (Figure 5, "2"), wherein: one of the second and third lenses is aspherical (column 8, lines 53-54 and column 9, Table 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the optical pickup of Tanaka et al to comprise an objective lens as claimed, since Iwaki et al teaches wherein it would be desirable to incorporate an objective lens as claimed for the purpose of providing an improved means of correcting chromatic aberration (i.e. less expensive and lighter).

Allowable Subject Matter

Claims 3 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 3 and 7: an objective lens device as claimed, specifically wherein a numerical aperture of the device is 0.70 or more.

Claims 19, 23, 27 and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 19, 23, 27 and 31: an optical pickup as claimed, specifically wherein the objective lens device has a numerical aperture which is 0.70 or more.

Response to Arguments

Applicant's arguments with respect to claims 1-16 and 36-42 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (703) 305-3100. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

W.C.

William Choi
Patent Examiner
Art Unit 2873
May 19, 2003



Loha Ben
Primary Examiner